

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently Amended) A method performed by an intermediate device driver, executing in a server, comprising:

managing transmission of data through ~~a plurality of the~~ adaptors connected to switches, wherein the intermediate device driver communicates with the adaptors through at least one adaptor device driver;

sending through the adaptors at least one query to the switches connected to the adaptor to determine a status of external ports in each queried switch communicating with a network; and

in response to determining from the at least one query that no external ports are operational in one non-operational switch, indicating not to transmit data to the adaptor connected to the non-operational switch, wherein the adaptor for which indication is made not to transmit data is functioning and capable of transmitting; and

indicating to transmit data to one adaptor connected to one switch having at least one operational external port in response to determining from the at least one query that at least one external port in the switch is operational when the switch was previously indicated as non-operational;

2. (Original) The method of claim 1, further comprising:
maintaining a switch map including information associating the adaptors with the switch to which the adaptors connect and a status of the external ports on the switches; and
updating the status of the external ports to the status determined from the at least one query.

3. (Canceled)

4. (Original) The method of claim 3, further comprising:
performing a failover to the switch that is operational from the switch that is non-operational in response to determining from the at least one query that one switch is non-operational; and
performing a failback to the switch that is determined to have at least one operational external port when the switch was previously indicated as non-operational.

5. (Original) The method of claim 1, wherein the adaptors are managed as a team and wherein load balancing operations are performed when transmitting data through the adaptors.

6. (Original) The method of claim 1, wherein each adaptor is connected to a different switch to provide redundant paths to the network.

7. (Currently Amended) The method of claim 1, ~~wherein the operations of managing the transmissions of data, sending the at least one query and indicating not to transmit data to one adaptor is performed by an intermediate device driver executing in a server in communication with adaptor device drivers, wherein each switch and the server are implemented on different printed circuit boards, and wherein the server and switch printed circuit board are in a chassis.~~

8. (Original) The method of claim 1, wherein the at least one query comprises an SNMP query of the external port link status.

9. (Currently Amended) A system in communication with at least one switch, wherein the switch communicates with a network, comprising:
a plurality of adaptors connected to the at least one switch;
circuitry executing at least one adaptor device driver providing an interface to the adaptors and an intermediate device driver in communication with the adaptor device drivers, wherein the intermediate device driver causes ~~capable of causing~~ operations, the operations comprising:
managing transmission of data through the adaptors;

sending through the adaptors at least one query to the switches connected to the adaptor to determine a status of external ports in each queried switch communicating with the network; [[and]]

in response to determining from the at least one query that no external ports are operational in one non-operational switch, then indicating not to transmit data to the adaptor connected to the non-operational switch, wherein the adaptor for which indication is made not to transmit data is functioning and capable of transmitting; and indicating to transmit data to one adaptor connected to one switch having at least one operational external port in response to determining from the at least one query that at least one external port in the switch is operational when the switch was previously indicated as non-operational.

10. (Currently Amended) The system of claim 9, wherein the operations performed by the intermediate device driver further comprise ~~comprising~~:

a switch map including information associating the adaptors with the switch to which the adaptors connect and a status of the external ports on the switches, wherein the operations performed by the circuitry are further capable of updating the status of the external ports to the status determined from the at least one query.

11. (Canceled)

12. (Currently Amended) The system of claim 9, wherein the operations performed by the intermediate device driver further comprise ~~circuitry are further capable of~~:

performing a failover to the switch that is operational from the switch that is non-operational in response to determining from the at least one query that one switch is non-operational; and

performing a fallback to the switch that is determined to have at least one operational external port when the switch was previously indicated as non-operational.

13. (Original) The system of claim 9, wherein the adaptors are managed as a team and wherein load balancing operations are performed when transmitting data through the adaptors.

14. (Original) The system of claim 9, wherein each adaptor is connected to a different switch to provide redundant paths to the network.

15. (Canceled)

16. (Original) The system of claim 9, further comprising:
a chassis, wherein the switches are implemented on printed circuit boards in the chassis;
and
a printed circuit board in the chassis on which the circuitry and adaptors are implemented.

17. (Original) The system of claim 9, wherein the at least one query comprises an SNMP query of the external port link status.

18. (Currently Amended) A system in communication with a network, comprising:
a chassis;
a plurality of switch printed circuit boards capable of being inserted in the chassis;
a server printed circuit board capable of being inserted in the chassis, and including:
a plurality of adaptors connected to the switch printed circuit boards;
circuitry executing at least one adaptor device driver providing an interface to the adaptors and an intermediate device driver in communication with the adaptor device drivers, wherein the intermediate device driver causes ~~capable of causing~~ operations, the operations comprising:

managing transmission of data through the adaptors;

sending through the adaptors at least one query to the switch printed circuit boards connected to the adaptor to determine a status of external ports in each queried switch communicating with the network; [[and]]

in response to determining from the at least one query that no external ports are operational in one non-operational switch printed circuit board, then indicating not to transmit data to the adaptor connected to the non-operational

switch printed circuit board, wherein the adaptor for which indication is made not to transmit data is functioning and capable of transmitting; and

indicating to transmit data to one adaptor connected to one switch having at least one operational external port in response to determining from the at least one query that at least one external port in the switch is operational when the switch was previously indicated as non-operational.

19. (Currently Amended) The system of claim 18, wherein the server printed circuit board further includes:

a switch map including information associating the adaptors with the switch to which the adaptors connect and a status of the external ports on the switches, wherein the intermediate device driver operations ~~performed by the circuitry are further capable of updating~~ update the status of the external ports to the status determined from the at least one query.

20. (Currently Amended) An article of manufacture comprising a computer readable storage medium having ~~code~~ an intermediate device driver executed to communicate with adaptor device drivers providing an interface to adaptors connected to switches, wherein the switches provide communication with a network, and wherein the ~~code~~ intermediate device driver is further executed to perform operations, the operations, comprising:

managing transmission of data through the adaptors connected to the switches;

sending through the adaptors at least one query to the switches connected to the adaptor to determine a status of external ports in each queried switch communicating with the network; and

in response to determining from the at least one query that no external ports are operational in one non-operational switch, then indicating not to transmit data to the adaptor connected to the non-operational switch.

21. (Original) The article of manufacture of claim 20, wherein the operations further comprise:

maintaining a switch map including information associating the adaptors with the switch to which the adaptors connect and a status of the external ports on the switches; and

updating the status of the external ports to the status determined from the at least one query.

22. (Canceled)

23. (Original) The article of manufacture of claim 22, wherein the operations further comprise:

performing a failover to the switch that is operational from the switch that is non-operational in response to determining from the at least one query that one switch is non-operational; and

performing a failback to the switch that is determined to have at least one operational external port when the switch was previously indicated as non-operational.

24. (Original) The article of manufacture of claim 20, wherein the adaptors are managed as a team and wherein load balancing operations are performed when transmitting data through the adaptors.

25. (Original) The article of manufacture of claim 20, wherein each adaptor is connected to a different switch to provide redundant paths to the network.

26. (Original) The article of manufacture of claim 20, wherein the operations are performed by an intermediate device driver in communication with adaptor device drivers.

27. (Original) The article of manufacture of claim 20, wherein the at least one query comprises an SNMP query of the external port link status.